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ordinary copper loops. Restricting access to “unified” loops starkly reduced competitors’ incentives and ability to invest in packet switching and other equipment needed to provide DSL-based service and has effectively granted the incumbents discretion to wall-off a major portion of their customer base to competitors for both voice and data services, thus securing their monopoly position and stifling the incentives that competition would otherwise bring to reduce prices and develop new and better services.

Subpart C discusses the CLECs’ continuing need for unbundled switching. It explains the crucial role that unbundled switching plays in overcoming the service quality impairments caused by the manual hot cut process and the significant loop access problems that result from ILECs’ substantial and increasing deployment of DLC in their loop plant. For business customers, unbundled switching is a important interim (at least) means for competitors to acquire large volumes of customers whose service can later be cutover to the competitor’s switch through a managed, project cutover that avoids the service quality problems and quantity limitations of order-by-order hot cuts. For residential customers, unbundled switching provides the only cost-effective way to provide local service. Subpart C also discusses the impact of the 3-line “carve-out” for unbundled switching in certain areas, and explains why, at a minimum, a much higher line limit, sufficient to justify deployment of a DS1 loop, is necessary to promote both local competition and the deployment of facilities. Finally, subpart C describes the nature and commercial availability of electronic loop provisioning, and explains the crucial role it could play in bringing about robust, facilities-based local competition comparable to what has been achieved in long distance.

Subparts D and E review the continuing and indisputable need for unbundled access to data bases and to operations support systems.

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Part V demonstrates that alternatives sufficient to justify restricting or de-listing a particular network element on a national basis will not emerge uniformly even within a single state, let alone a region or nationwide. Thus, any evidence of CLECs' ability to obtain practicable and economic access to UNEs alternatives is spotty at best. Indeed, except for standalone signaling – which can be obtained on a regional rather than local basis – the evidence clearly forecloses the de-listing of any currently defined network elements at this time. Therefore, given the inherently local nature of the development of competition in local markets, to the extent that the Commission finds there is sufficient evidence in this record to inquire further about specific unbundled network elements, it should develop a process that would permit the States to take the lead in both adding, and restricting access to, individual network elements. As the Commission has long recognized, states are in the best position to judge the facts regarding local competition, and it has accordingly relied on state judgments. Moreover, the state commissions are closest to their residents' needs and they also often have independent obligations under state law to support competition. Therefore, it is appropriate that individual states take the lead in considering whether any change to the national minimum list is appropriate in their jurisdiction.

Finally, Part VI addresses the Commission's request for comments on the timing and scope of future reviews of the unbundling rules. It explains that such reviews should be limited and should focus on whether changes in factual circumstances warrant a change in rules. In particular, such proceedings should not invite the parties to reinvent the rules from scratch, because by periodically putting the entire regulatory framework "up for grabs," the Commission compounds the uncertainty that has delayed CLECs' development and execution of business

plans, restricted the availability of capital for investment, and thus further delayed the very competition that the Commission and the Act seek to promote.

ARGUMENT

I. THE COMMISSION CORRECTLY DEFINED THE “IMPAIR” STANDARD IN THE *UNE REMAND ORDER*.

The central inquiry under the Act to determine whether particular network elements should be unbundled is whether “the failure to provide access to such elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.” *See* 47 U.S.C. § 251(d)(2).² When the Commission first considered this standard, it adopted an approach that refused even to examine the possibility of alternatives to ILEC facilities existing outside the ILEC network, and that regarded “any” increase in cost incurred (or decrease in quality suffered) by a CLEC as a result of being denied access to a network element as sufficient to establish impairment. *See Local Competition Order* ¶¶ 285-287. In *AT&T Corp. v. Iowa Utilities Board*, 525 U.S. 366, 387-392 (1999), the Supreme Court vacated those portions of the *Local Competition Order* that articulated or applied that approach, and remanded the issue to the Commission for further analysis.

The governing formulation of the “impair” test was developed in that remand proceeding. The Commission dramatically overhauled its approach, and assigned central importance to

² The Commission has found that the separate “necessary” standard for proprietary elements is applicable to none, or virtually none, of the network elements that the ILECs are presently under an obligation to unbundle. The Commission stated in the *UNE Remand Order* that the routing tables in switches “may” be proprietary, but found that claim irrelevant because it concluded that the routing tables would satisfy even the “necessary” standard if that standard applied. *UNE Remand Order* ¶¶ 247-252. The Commission found no other potential proprietary concerns with respect to any network elements it ordered to be unbundled.

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analyzing “alternative elements that are available through self-provisioning or from third-party suppliers” and determining whether those alternatives were in fact available “as a practical, economic, and operational matter.” *UNE Remand Order* ¶ 21. It further developed a standard for measuring impairment that did not regard the existence of “any” increase in cost or diminution in quality as dispositive of impairment, but looked instead at a range of factors to critically assess what was actually going on in the marketplace, and what would happen if an element were unavailable as a UNE. The essence of the inquiry is whether multiple CLECs who do not obtain access to a UNE are now profitably providing, or could now profitably provide, the same quality services to the same classes of customers as the ILEC.

Specifically, the Commission held that a CLEC is “impaired” without access to a UNE if the lack of access “materially diminishes a requesting carrier’s ability to provide the services it seeks to offer.” *UNE Remand Order* ¶ 51. To make that determination, the Commission in particular examined effects such as increased costs,³ delays,⁴ quality differences or operational or technical impediments,⁵ and limitations on ubiquity.⁶

³ See *UNE Remand Order* ¶ 24 (“we examine both the direct and other costs a carrier incurs to substitute the alternative network element for the incumbent LEC’s network element”).

⁴ See *id.* (“[w]e also consider whether self-provisioning or purchasing a network element from a third-party supplier would prevent a requesting carrier from entering the market within a reasonable time, or from expanding its operations to meet promptly the demand of its customers”).

⁵ See *id.* (“we assess whether use of an alternative source of the network element would cause a requesting carrier’s customers to experience degraded service”).

⁶ See *id.* ¶ 25 (“[i]n some cases, to compete effectively with the incumbent LEC for the same customers, competitive LECs must be able to attain similar economies of scale that can only be achieved by serving a broad base of customers within a geographic area”).

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This straightforward interpretation of the standard is faithful to the Act's text, to its purposes, to the Supreme Court's decision, and to marketplace practicalities, and the Commission recently defended it as such before the Court of Appeals for the D.C. Circuit.⁷ The *Notice* largely does not revisit that legal analysis, and, with respect to most of that framework's features, does not call it into question. However, it does ask three questions that are relevant to the standard. The Commission has answered those questions consistently and correctly in the past, however, and there is no statutory or other basis for reopening them or reversing the prior holdings.

First, the Commission asks whether “cost [should] be afforded less weight than other factors.” *Notice* ¶ 19. There is no conceivable basis for such a rule. The central question that any rational firm will examine in deciding whether to enter a market is whether it can do so profitably, and “cost” constitutes fully half of that analysis (the other half being revenue). Indeed, each of the other forms of disadvantage on which the Commission's “impairment” analysis relies (such as delay and poorer quality) can be expressed in terms of cost differences, and the CLEC can overcome those disadvantages, if at all, only by incurring materially higher costs or charging materially lower prices. *See* Willig Dec. ¶ 125. In determining whether a CLEC's ability to provide service will be materially diminished without access to a particular UNE, therefore, the Commission cannot reasonably downgrade the attention it pays to the core factor of “cost.”

⁷ *See* Brief of Respondent FCC, *United States Telecom Assoc. v. FCC*, No. 00-1015 (D.C. Cir.) (filed July 2, 2001) (“*FCC UNE Remand Brief*”).

In the *UNE Remand Order*, the Commission explained the many different ways in which analysis of costs could be not only important, but critical. For example, it found that “[i]f the cost of the alternative element is materially greater than the cost of obtaining the corresponding element from the incumbent, the requesting carrier will not be able to provide service at prices that are competitive with the incumbent’s prevailing retail prices.”⁸ It further found that the presence of either significant “fixed costs”⁹ or significant “sunk costs”¹⁰ could substantially affect a requesting carrier’s ability to offer service in competition with the ILEC. Most vitally, it recognized “the economies of scale and scope that the incumbents have due to their ubiquitous network,” and explained “that one important purpose of the unbundling provisions of the Act is to permit competitive LECs to compete with the same economies as the incumbents, especially in the early stages of local competition, when their networks are limited in their reach, and their customer bases are necessarily small.”¹¹

⁸ See *UNE Remand Order* ¶ 73.

⁹ See *id.* ¶ 76 (“If a competitive LEC incurs significant fixed costs when it uses a particular facility, in its early stages of development it would have a significantly higher average unit cost than the incumbent LEC, which has a significantly larger output and customer base over which to spread the fixed cost”).

¹⁰ See *id.* ¶ 77 (“where an incumbent has already deployed sunk facilities to serve all customers, a competitive LEC may be unwilling to sink the costs of duplicative facilities, either because it may be unable to lure customers away from the incumbent and generate enough revenue to recover these sunk costs, or because resulting competition between itself and the incumbent LEC would drive prices so low that, even if the competitive LEC won a significant number of customers, it would still be unable to recover its sunk costs.”).

¹¹ See *id.* ¶¶ 84-86; see also *Local Competition Order* ¶ 11.

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These conclusions are obviously correct as a matter of basic economics,¹² and are confirmed by marketplace experience.¹³ Moreover, the *Notice* does not offer any basis for calling them into question. Its sole elaboration for its cryptic question regarding “cost” is a citation to *Iowa Utilities Board*. See *Notice* ¶ 19 n.58. It may be, therefore, that in posing this question the Commission was referring to the ILECs’ claim in their appeal of the *UNE Remand Order* that the Supreme Court had *precluded* consideration of cost in the “impairment” analysis. As the Commission properly explained in that case, the ILECs’ claim grossly “mischaracterizes the Supreme Court’s decision because that decision did not preclude consideration of cost differences, nor did it foreclose such differences from being dispositive in appropriate circumstances.”¹⁴ As Judge Williams observed at oral argument, the Commission’s shift in the *UNE Remand Order* from relying on “any” cost difference to only “material” cost differences fully addresses this aspect of the Supreme Court’s decision.¹⁵

Second, the *Notice* also asks whether the Commission’s “impairment” analysis should account for the “availability of tariffed offerings.” See *Notice* ¶ 44; see also *id.* ¶ 73 (noting that an ILEC has “asserted that mandatory unbundling of its broadband network is not necessary . . . where other carriers can purchase wholesale services at its central office”). That the *Notice*

¹² See Clarke Dec. ¶¶ 29-38 (demonstrating economies of scale, scope and density in the provision of telecommunications services); Willig Dec. ¶¶ 58-74 (discussing the effect of those economies on efforts to provide service in competition with incumbents).

¹³ See Huels Dec. ¶¶ 34-40 (discussing ways in which cost considerations shape AT&T’s entry strategies in residential markets); Brenner Dec. ¶ 15 (same for business markets).

¹⁴ See *FCC UNE Remand Brief* at 29-30.

¹⁵ See Oral Argument Transcript at 9-10, *United States Telecom Assoc. v. FCC*, No. 00-1015 (D.C. Cir. March 7, 2002).

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would seek comment on this issue is astonishing, for the Commission has repeatedly and properly rejected this claim. Indeed, it recently explained to the D.C. Circuit that adopting the ILECs' view "would yield absurd results."¹⁶

The Commission first rejected this claim in the *Local Competition Order* (§ 287), and then again in the *UNE Remand Order* (§ 354). Moreover, in its review of the *Local Competition Order*, the Eighth Circuit "agree[d]" that relieving ILECs of UNE requirements on the ground that a UNE's functionality could also be provided in the form of a wholesale service improperly "would allow the incumbent LECs to evade a substantial portion of their unbundling obligation under subsection 251(c)(3)."¹⁷ As the Commission explained, allowing ILECs to substitute above-cost special access tariffs for UNEs would effectively gut the market-opening obligations of the Act:

If we were to adopt the incumbents' approach, the incumbents could effectively avoid all of the 1996 Act's unbundling and pricing requirements by offering tariffed services that, according to the incumbents, would qualify as alternatives to unbundled network elements. This would effectively eliminate the unbundled network element option for requesting carriers, which would be inconsistent with Congress' intent to make available to requesting carriers three different competitive strategies, including access to unbundled network elements.

UNE Remand Order § 354. This is a complete answer to the ILECs' contrary argument, and the passage of time has rendered that argument no less "absurd."

Finally, the Commission asks whether it should consider "intermodal providers" such as cable companies to be "competitive alternatives to the incumbent's network." Because the focus

¹⁶ See *FCC UNE Remand Brief* at 37.

¹⁷ See *Iowa Utilities Board v. FCC*, 120 F.3d 753, 809 (8th Cir. 1997), *aff'd in part and rev'd and remanded in part on other grounds*, *AT&T Corp. v. Iowa Utilities Board*, 525 U.S. 366 (1999)

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of § 251(d)(2) is on “the telecommunications carrier seeking access,” and whether *its* “ability . . . to provide the services that it seeks to offer” will be “impaired,” intermodal providers are alternatives under § 251(d)(2) only insofar as they make alternatives available *to the CLEC*. Under that standard, it is irrelevant, for example, that a cable company may be competing with the incumbent LEC if, as is virtually always the case, the requesting carrier has no ability to obtain access to the cable company’s facilities for purposes of providing competing services.¹⁸

II. THE AVAILABILITY OF UNES PROMOTES, RATHER THAN DISCOURAGES, INVESTMENT IN FACILITIES, AND IT WOULD BE CONTRARY TO CONGRESS’ INTENT AND FRUSTRATE THE ACT’S OBJECTIVES IF THE COMMISSION DENIED ACCESS TO UNES WHERE THE “IMPAIR” STANDARD IS MET.

Alarming, the principal focus of most of the proposals in the *Notice* is not to examine or refine the statutory “impair” standard, but to override it. The *Notice* devotes only two paragraphs to the “threshold statutory analysis” of the meaning of “impair,” but ten paragraphs to inquiring whether the Commission should deny access to UNEs even when the “impair” standard is met on the theory that such action might encourage CLECs and ILECs to invest in new facilities. Compare *Notice* ¶¶ 19-20 (meaning of “impair”) with *id.* ¶¶ 21-30 (promoting facilities investment). Any decision to do so would violate the principles of the Act and sound public policy.

¹⁸ See Brief of Federal Communications Commission, *United States Telecom Assoc. v. FCC*, No. 00-10124, at 20 (D.C. Cir.) (filed Sept. 14, 2001) (rejecting the ILEC argument that “alternative technologies” like cable television can be a “substitute” for UNEs under § 251(d)(2) where the “operators of those systems are under no express statutory obligation to share their facilities with CLECs”); *UNE Remand Order* ¶ 189 (rejecting “incumbent LECs’ argument that cable television service offers a viable alternative to the incumbent’s unbundled loop”).

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In even raising these questions, the *Notice* appears to give unfortunate and undue credence to the ILECs' principal advocacy theme over the last six years. They repeatedly have claimed that the availability of UNEs impedes, rather than fosters, the development of competition because, they say, making UNEs available discourages investment in facilities-based alternatives that would promote more robust forms of competitive entry. Thus, they claim, a rational CLEC (given the choice) will virtually always compete through cost-based UNEs rather than build alternative facilities, because it can purportedly "free-ride" on the ILEC's investment rather than taking the greater risk of building its own network. The ILECs also claim that the availability of UNEs discourages them from upgrading their own networks, because they will not bother to do so if some of the fruits of those investments would have to be shared with their competitors. *See Notice* ¶ 23.

These claims are legally, theoretically, and factually wrong. First, they are an impermissible collateral attack on the 1996 Act. Moreover, both economic theory and "actual marketplace experience" (*Id.* ¶ 17) show that their factual premises are untrue.

First, the requirement that ILECs make UNEs available at cost-based rates is the central market-opening provision of § 251, and the "necessary" and "impair" standards are the considerations that Congress established to drive the identification of the network elements that must be unbundled. While Congress also allowed the Commission to consider other factors *along with* the "necessary" and "impair" standards, it certainly did not expect or permit the Commission to decide that the mandatory provision of UNEs was itself a threat to competition – and thereby to treat as a separate "factor" a policy view so fundamentally opposed to the underlying theory of the Act. *See Farmers Union Central Exchange v. FERC*, 734 F.2d 1486,

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1500 (1984) (“Agency decisionmaking . . . must be more than ‘reasoned’ in light of the record. It must also be true to the congressional mandate from which it derives authority”).

Second, Congress’ policy choice is not only binding, but correct. It represents the only way to create the preconditions necessary for competition. By contrast, it is fantasy to suggest that a CLEC that is impaired without access to a UNE will nonetheless press on and build facilities if that UNE is withheld. By definition, that CLEC would then be seeking to compete with an entrenched incumbent, while hobbled with one or more of the disabilities that establish “impairment” – *e.g.*, a higher cost structure, delays in bringing services to market, materially lower service quality, or other material impediments. *See Notice* ¶ 8. That hypothetical CLEC would be certain to fail, and no rational investor would provide it with capital. Thus, if a CLEC is “impaired” within the meaning of § 251(d)(2) without access to a UNE, and that UNE is withheld, the result will not be facilities-based competition, but no competition – and both elementary economic theory and the actual marketplace experience of the last six years confirm that reality. The ILECs fully understand this. Indeed, they would have no reason to advocate policies that they believe would actually result in broader and stronger facilities-based competition to their monopolies.

Furthermore, while the existing rules that *require* unbundling are therefore no obstacle to facilities investment by CLECs, the existing rules that *restrict* unbundling – such as use restrictions, the ban on “co-mingling,” the failure to require ILECs to make available a “unified UNE loop” when they deploy NGDLC architecture, and the switching “carve-out” – are each a substantial such obstacle. Facilities will be built when, but only when, they can be filled with sufficient traffic to justify the investment. Unbundling rules that enable CLECs to build up their customer base therefore enable them to invest in facilities, because then those facilities can be

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efficiently utilized to generate an adequate return. By contrast, rules that impede CLECs' ability either to acquire or to aggregate traffic necessarily impede their ability to build. Those principles are not only firmly established by economic theory, they are also borne out by recent marketplace experience.

Restrictions on unbundling also diminish ILECs' incentives to build. The ILECs have never been a significant source of innovation, and they ultimately invest in improving their networks for only two reasons: (1) to increase revenue by improving network efficiencies or stimulating demand, or (2) to protect revenue by responding to actual or feared competitive threats. The first incentive is unaffected by unbundling requirements, but the second is clearly diminished if unbundling is limited. Unbundling strengthens CLECs' ability to invest in facilities and increases their competitive threat to ILECs, which in turn can be a significant spur to ILEC investment. For example, if left to their own devices, ILECs have significant incentives to depress, rather than stimulate, consumer demand for broadband services, because DSL-based service discourages consumers from ordering the second telephone lines that will often be more profitable for the ILEC. Indeed, that is presumably why, once their principal data LEC competitors failed, the ILECs were able to raise their DSL prices by 25% this last year, at a time when DSL prices in other countries were falling. If, however, CLECs are able to lease loops and other network elements from the ILECs at cost-based rates and combine those facilities with their own DSLAMs and packet switches in order to offer customers both DSL-based and voice services on a single line, the ILECs will have to compete on price and quality or lose customers entirely from their retail services.

For all these reasons, it is unsurprising that, as shown below, there has been more facilities investment both by CLECs and by ILECs in those states where there is effective UNE-

P competition than in those states where there is not. Moreover, the experience of other countries supports the same conclusion: the Organization for Economic Cooperation and Development (“OECD”) recently concluded, after an extensive survey of the marketplace evidence in 30 countries, that “opening access networks and network elements to competitive forces increases investment and the pace of development,” and that, by contrast, there is “no evidence . . . to substantiate” the “claim” that unbundling “discourage[s] investment in new infrastructure.”¹⁹

These points are developed in more detail in the remainder of this section. Parts A and B consider separately the incentives CLECs and ILECs each have to build facilities and the relationship between those incentives and unbundling requirements. Part C then addresses some of the most significant and harmful consumer consequences that would follow if the Commission were to override the “impair” standard on the basis of the false premise that doing so would promote facilities investment.

A. The Availability Of UNEs Does Not Discourage CLECs From Investing In Facilities; It *Enables* Them To Do So.

Just over two years ago, the Commission found, on the basis of a voluminous record, “that unbundled access to certain incumbents’ network elements will accelerate initially competitors’ development of alternative networks because it will allow them to acquire sufficient customers and the necessary market information to justify the construction of new facilities.” *UNE Remand Order* ¶ 112. The ILECs contested that finding at the time, and have continued to contest it since, maintaining that the availability of UNEs discourages rather than accelerates

¹⁹ *The Development of Broadband Access in OECD Countries*, OECD Report, pp. 4, 15 (Oct. 29, 2001).

CLEC investment in facilities. Under the ILECs' view: (1) CLECs could successfully build and compete with alternative facilities today to a greater extent than they are currently doing; (2) they are declining to do so because they have the easier and more attractive option of using UNEs instead; and (3) the way to accelerate the development of alternative networks is to remove the UNE "crutch" and force CLECs to stand on their own feet.

The ILECs are wrong on all counts. Indeed, this theory is premised on patently erroneous assumptions that are contradicted by all available evidence. That evidence establishes that CLECs will deploy their own facilities whenever and wherever it is economically and technically feasible to do so, whether or not UNEs are available as an alternative. The availability of UNEs helps to make a broader range of facilities investments feasible, and will never discourage such investments when they are feasible.

The ILECs obviously have no reason to promote facilities-based competition to their monopolies, and the contrary theory they advance could not possibly have that result. Both ILECs and CLECs understand that the greatest promise for competition, and the greatest threat to existing monopolies, will come from facilities-based alternatives in local markets, just as it did in the long-distance market. That is why ILECs oppose, and CLECs support, the broad availability of UNEs – because both sets of carriers recognize that UNE availability is essential to promote facilities deployment. That is the teaching of both basic economics and marketplace experience.

1. Basic Economic Principles Establish that UNEs do not Deter CLEC Investment.

Basic economic principles show that the ILECs' suggestion that the availability of UNEs might discourage CLECs from investing in their own facilities is nonsense. First, the Commission's formulation of the "impair" standard itself establishes that no CLEC would build

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facilities where that test is met. Because no one is proposing that the Commission order the unbundling of network elements that do not meet the “impair” standard, the only question is whether denying access to UNEs where CLECs *are* impaired could compel or encourage them to compete through alternative facilities. That question answers itself. CLECs are already in an exceedingly tenuous and precarious financial position, and they face enormous hurdles in attempting to compete with monopoly ILECs. The notion that such firms will pursue entry against an entrenched and dominant market incumbent when they know they will face higher costs, provide an inferior service, or suffer material delays in responding to customers – the definition of “impairment” – is simply incredible. No CLEC could succeed on that basis, and no such business plan – particularly in today’s investment climate – could attract funding. Accordingly, if the Commission declines to order unbundling where CLECs would nonetheless be impaired, it is guaranteeing that there will be neither UNE investment nor facilities investment.

Conversely, if the Commission were to order unbundling in some instance where some CLECs would not be “impaired” in the absence of unbundling – because, for example, concerns with administrative practicality lead the Commission to order “marginally overinclusive” unbundling (*UNE Remand Order* ¶ 366) – such action would do no harm to competition, for it would not diminish any CLEC’s incentive to invest in its own facilities. As the Commission has found, CLECs will always prefer to provide service through their own facilities wherever it is possible to do so, regardless of whether UNEs are also available. *See UNE Remand Order* ¶ 112 (CLECs will “deploy alternative facilities as soon as it is technically and economically possible to do so at a cost that is close to the incumbent LECs’ prices for network elements”).

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CLECs will always prefer to use their own facilities because, contrary to the ILECs' condescending claims that CLECs are "parasites" seeking to obtain "free rides" at "below cost UNE rates," UNEs do not offer CLECs an especially attractive vehicle for competitive entry. Instead, reliance upon UNEs places CLECs at a substantial cost disadvantage even when (as is often not the case) UNE rates have been properly set under TELRIC. In that circumstance, CLECs that use UNEs theoretically pay the same costs that the ILEC incurs in using the element, plus the same *pro rata* contributions to universal service support mechanisms. But they then face a series of additional costs that the ILEC does not incur.

First, CLECs relying on network elements face higher costs than the incumbent because the incumbents lack any incentive to cooperate and have extensive opportunities and incentives to discriminate against them. CLECs also have higher unit marketing costs (and thus tighter margins) because they must pry customers away from the incumbent LEC and often price below the incumbent in order to do so. CLECs further face the risk that, if they ever show signs of making substantial competitive progress, the incumbent LEC will assert its cost advantage and price its exchange and exchange access services at levels that could limit, or altogether preclude effective CLEC mass market entry. CLECs also face the risk that the central regulatory requirements on which their core business plans depend will be fundamentally modified or eliminated merely because the composition or philosophy of regulatory bodies has changed. *See* Willig Dec. ¶¶ 13, 57.²⁰ By contrast, when CLECs use their own facilities, they acquire control over their costs, service offerings, and the sensitive information regarding their entry plans, and

²⁰ These disadvantages exist *on top of* additional disadvantages that impose greater risks and higher capital costs on CLECs than the incumbent. *See* Willig Dec. ¶¶ 43-56.

they detach themselves from reliance on their competitors. In such cases, if the economics are also right, they may have a long-term prospect of competitive success. *See* Brenner Dec. ¶¶ 12-13; *see also UNE Remand Order*, ¶ 112 (“competitive LECs prefer to use their own facilities or alternatives outside the incumbent’s network when they are able to do so, in order to reduce their reliance on a primary competitor,” to avoid “disclos[ing] details about their customers to their chief competitor,” and to “ensure the quality of their service and to offer products and pricing packages that differentiate their services from the perspective of end users”).

There is therefore nothing seductive about UNEs where there are workable alternatives. “[T]he reality is that UNE-P competition generally will occur only in circumstances in which the only alternative for the CLEC is no competition – either because substitution of alternative facilities by the CLEC is economically and technically impossible or because it will not be possible until the CLEC has built up necessary traffic volumes, acquired necessary information on traffic patterns, or completed the often lengthy process of deploying its own alternatives to some of the ILECs’ facilities.” *See* Willig Dec. ¶ 76. If access to the necessary UNEs is denied, CLECs will not shift more quickly to serving those customers through alternative facilities. If that were possible, the shift would have occurred whether or not UNEs were available. Rather, CLECs will simply (a) cease serving those customers in the short-term, and (b) lose the opportunity to grow into a facilities-based competitor in the long term.

2. Marketplace Evidence Confirms that the UNEs do not Deter CLEC Investment.

All these points are abundantly confirmed by marketplace evidence. To begin with, the process that Congress established for UNEs is effectively the same process that successfully, but gradually, led to facilities-based competition in the long-distance market. *See id.* ¶¶ 209-22.

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Before competitive long-distance service was authorized, the long-distance market had been regarded as a natural monopoly. That market developed into a competitive one as entrants like MCI and Sprint used resale to acquire a customer base over a number of years, gradually built out networks, and eventually – after decades of effort – became facilities-based competitors. Those resale opportunities produced enormous consumer benefits, both in the short run, while the new entrants still acted as resellers, and in the long run, once they completed their own networks. If, however, that process had been cut short after a few years – because, for example, the Bell System had persuaded policymakers that MCI's resale offerings were not “real” competition, and that disallowing resale was the way to encourage MCI to build the facilities necessary for “real” competition – then the long-distance market would still be a monopoly today.²¹ Moreover, even today, long-distance competitors are not full “facilities-based carriers,” for they remain dependent on the ILECs' bottleneck local facilities to connect to customers.

The more recent history of CLEC investment likewise refutes any notion that reduced availability of UNEs correlates with increased CLEC facilities investment. For example, AT&T has invested at least as heavily in facilities in states like New York, where AT&T has made extensive use of UNE-P to provide service to about [proprietary begin] ***** [proprietary

²¹ Two other developments were critical to the development of long-distance competition, and are likewise instructive for the Commission's efforts to foster comparable levels of competition in local markets. First, “equal access” permitted customers to change long-distance carriers using efficient electronic processes that did not create the delays, costs, and outages associated with the manual hot cut process. Establishing equal electronic access to the loop would generate the same type of benefit in today's local market. See Willig Dec. ¶¶ 219-22; *see also infra* Part IV(C)(4); Attachment G. Second, the local operating companies were separated from the long-distance market, so they had no incentive to impede competition among long-distance carriers (and, indeed, every incentive to encourage long-distance competition and thus increase access revenues). See Willig Dec. ¶ 217. Proposals for structural separation of the ILECs are based on the success of that policy.

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end] customers, as in California and other states where UNEs have been priced so high as to be effectively unavailable and AT&T offers no UNE-P service. If the ILECs' claims about incentives were accurate, AT&T would have made significantly greater investments in facilities in California, especially since it is larger and more populous than New York. Instead, AT&T has deployed more switches, serves more buildings, terminates more DS0 and DS1 loops, and has deployed more fiber miles per hub location in New York than California. *See* Leshner-Frontera Dec. ¶¶ 49-50.

Most probatively, the marketplace evidence of the last six years establishes that CLECs today – like the long-distance entrants of prior years – will build wherever and whenever there is a basis for them to believe it will be economic to do so.

CLECs have made massive investments in facilities. As of 2001, CLECs had deployed 1,244 voice switches and tens of thousands of mile of local fiber. Willig Dec., Table 1. CLECs also had deployed 9,524 data switches. *Id.* Indeed, three “data LECs” – NorthPoint Communications, Covad Communications, and Rhythms NetConnections – spent as much as \$1.5 billion building out their networks. *Id.* ¶ 89.

The problem in the CLEC sector has not been *reluctance* to invest in facilities, but excessive enthusiasm in doing so. The “build it and they will come” approach was a sweeping failure. AT&T is aware of 37 CLECs who have petitioned for bankruptcy protection or who have been liquidated in bankruptcy in the past 18 months. *See id.*, Table 2. Many of them are CLECs that self-provisioned switches and found themselves unable to fill their switch capacity – such as e.spire (28 voice switches in 2001), ICG Communications (43 switches), Global Crossing (13 switches), McLeod USA (50 switches), and Mpower (which reduced its switches in 2001 from 16 to 8). *Id.* ¶ 93. Other major switch-based CLECs – such as Adelphia Business

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Solutions (33 switches), Allegiance Telecom (30 switches), Focal Communications (24 switches), ITC (13 switches), Network Plus (10 switches), and XO Communications (35 switches) – have reported severe financial difficulties. *Id.* Of the three major data LECs, two (Rhythms and NorthPoint) are out of business, and the third (Covad) restructured after a Chapter 11 filing. *Id.* ¶ 89.

Given the sheer numbers involved, the wave of CLEC bankruptcies and liquidations, all of which came after the *UNE Remand Order*, cannot be explained away as a function of individually bad business plans, or of poor management in particular companies. To the contrary, many CLECs that were identified as having sound plans and strong management are suffering the same fate as the others. Allegiance Telecom, Time Warner Telecom, McLeodUSA and XO Communications, for example, were frequently identified by analysts as recently as 2001 as “survivors” with “experienced leadership” or “strong management.” Today – less than one year later – each is in financial distress. Allegiance reports severe financial problems, Time Warner has sought permission to withdraw from offering service in New York, McLeod is in bankruptcy, and XO is negotiating with its lenders over a bankruptcy petition. Willig Dec. ¶ 96.

The problem is plainly systemic. The industry-wide collapse reflects the fact that many CLECs invested in facilities before they had acquired (or would soon acquire) enough customers to fill those facilities with traffic that could generate enough revenue to make them profitable. *See id.* ¶¶ 92-95. Unlike the sequence that led to competition in the long-distance market – in which MCI, for example, *first* acquired customers and revenue using resale and *then* used the capital it was able to attract to invest in facilities – many CLECs attracted capital first, and invested it on an expectation of future revenues that was never realized.

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The general industry-wide collapse of facilities-based competitors teaches at least four lessons of central importance here. First, CLECs do not need additional incentives to invest in facilities, because they will strain to do so – and err on the side of doing so – rather than use UNEs whenever they believe the economics of that choice are even close. Second, the sound business model that worked in the long-distance market has not changed: carriers still need an opportunity to grow into markets before they will be able to successfully build and use alternative facilities. Third, if facilities investment occurs prematurely, either because the market or the regulatory context precludes them from filling their facilities with sufficient traffic, the result will be not more facilities-based competition, but more failures of facilities-based competitors. And fourth, the capital markets, fresh from recent experience, will not fund further CLEC investment unless the economic case for doing so is especially compelling. The suggestion that the Commission could encourage either CLECs or their potential investors to commit more funds to building facilities by withholding access to UNEs is thus either naïve or disingenuous, for it completely fails to appreciate that such business decisions are necessarily driven by entirely different considerations. Those considerations – in particular, the overriding superiority of providing competitive service through alternative facilities rather than UNEs – means that the availability of UNEs will not deter investments that would otherwise be made.

AT&T's own experience vividly confirms these conclusions. AT&T has made enormous investments in local facilities since adoption of the 1996 Act. Those investments include over 115 local switches,²² over 17,000 fiber route miles (consisting of millions of miles of fiber

²² This figure is in addition to 12 switches formerly owned by MediaOne, which are being integrated into AT&T's local network. Leshner-Frontera Dec. ¶ 32.

strands), and collocations AT&T has established in over 1000 ILEC end offices in more than 60 cities.²³ In those collocations, AT&T has deployed over [proprietary begin] ***** [proprietary end] digital loop carrier (“DLC”) units to terminate unbundled loops, approximately [proprietary begin] ***** [proprietary end] DS1 to DS3 multiplexers, and over [proprietary begin] ***** [proprietary end] optical concentration (“OC”) multiplexers. See Leshner-Frontera Dec. ¶¶ 9-36. While substantial, AT&T’s local facilities network is only a fraction of the size of the ILECs’ – who have about 14,000 switches nationwide where customer loops are terminated, and 362,505 miles of fiber. Leshner-Frontera Dec. ¶¶ 33, 38. AT&T’s “fraction” nonetheless has reflected billions of dollars of investments. *Id.* ¶ 9.

AT&T’s investments were made notwithstanding the availability of UNEs because AT&T has always sought and, where possible, employed, facilities-based entry strategies, and has used UNEs only where the alternative would have been no competition at all. Because AT&T’s experiences in both the business and residential markets are relevant here, and because the ILECs’ theories about CLEC incentives are so completely at odds with those actual experiences, it is instructive to review those experiences in some detail.

Business markets. AT&T’s entry into local business services markets decisively refutes any suggestion that the availability of UNEs will divert a carrier from investing in facilities if such investments are at all feasible. AT&T’s entry strategies have been premised on the decision to use its own facilities to the greatest extent possible, in order to maximize its ability to innovate and differentiate its service offerings and minimize transaction and litigation costs, regulatory

²³ These collocations do not include the approximately [proprietary begin] ***** [proprietary end] collocations AT&T obtained from Northpoint, many of which have been or are being returned to the ILEC. Leshner-Frontera Dec. ¶ 33 n.9.

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uncertainties, and the other enormous baggage that comes with using UNEs. Brenner Dec. ¶¶ 12-13. AT&T has therefore always pursued facilities-based strategies as its first choice and used UNEs as a last choice – only where its sole alternative is to offer no service at all. Indeed, AT&T's bias in favor of facilities-based competition has been so strong that its principal – and most costly – miscalculations have been attempts to use alternative facilities where the economic or operational obstacles to such strategies were, in hindsight, too powerful to surmount.

AT&T's facilities-based strategies have been most successful with customers that are intensive users of telecommunications services from concentrated locations – typically some large business customers whose traffic is aggregated at a high enough level at a small number of locations, rather than diffused among numerous separate locations. AT&T's substantial investments in local switches, SONET rings, and collocations enabled AT&T to serve a limited number of such customers in multiple cities. Brenner Dec. ¶ 26. Moreover, in addition to deploying local switches to serve intensive telecommunications users, AT&T developed an innovative new service – AT&T Digital Link (“ADL”) – that uses AT&T's long-distance switches. Offering ADL required AT&T to make substantial investments to re-engineer over 200 of its long-distance switches so that they could be used to provide combined local and long-distance services to the largest volume customers. *Id.* ¶¶ 27-28. By contrast, AT&T has never attempted (and has no plans) to serve large volume customer locations using unbundled ILEC switching. *Id.* ¶ 29.

Initially, AT&T also had no intention of using unbundled switching to serve locations with more moderate demand. Because such customers do not generate enough traffic to justify building loops to their buildings, AT&T believed that it could make maximum use of its own facilities by combining ILEC voice-grade loops with its own switches and collocations – an entry

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strategy known as UNE-L. AT&T invested substantially to effectuate this strategy, both in the facilities themselves and in the support mechanisms necessary to provision unbundled ILEC loops. Brenner Dec. ¶¶ 31, 36.

A UNE-L strategy imposes substantial fixed costs to purchase and deploy local switching equipment and collocations before service can be offered, as well as the monthly operational costs of providing the service. In order to compete successfully, therefore, AT&T must be able to ramp up commercial sales volumes quickly in order to recover those fixed costs and efficiently utilize those fixed investments. AT&T therefore focused its entry efforts on states such as New York and Texas where, among other preconditions, it believed there would be an effective process for efficiently provisioning unbundled loops and collocation space that would enable it rapidly to serve the substantial number of customers it was confident it could attract. Brenner Dec. ¶¶ 33, 35.

But AT&T's initial UNE-L strategy did not pan out. Even in those states where AT&T believed it would be best able to obtain effective provisioning processes, AT&T found it could not efficiently access the voice-grade loops from low-volume business locations and move them onto AT&T switches. In a number of cases, that was because the customers were served with digital loop carrier ("DLC"), and the ILECs could not effectively provide access to those customers. Brenner Dec. ¶¶ 22, 39, 74-77. But even where DLC was not used, the "hot cut" process – the coordinated migration of the ILEC's loop from the ILEC's network to AT&T's network – proved unworkable, because customers experienced significant delays and outages that caused serious and unacceptable harm to AT&T's reputation in the business community. Brenner Dec. ¶¶ 21, 39-41, 67-73.

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The numbers were stark and unforgiving: In about two years of attempting to make the UNE-L strategy work, from about 1998 through parts of 2001, AT&T provisioned only about [proprietary begin] ***** [proprietary end]. Delays were common, customer conversion took an average of 45 days from the date the customer agreed to take AT&T local service, the likelihood of a non-trivial service outage ranged from 6% to 9%, and, largely for these reasons, *more than half the orders were cancelled prior to conversion*. Brenner Dec. ¶¶ 39-41. The Commission has recognized that the hot-cut process creates a substantial impairment to serving the residential market without unbundled switching, but believed that business customers in certain areas that used at least four voice-grade lines could be served successfully through UNE-L, if other conditions were met. *UNE Remand Order*, ¶¶ 271, 294. AT&T's experience has now shown otherwise. In 2001, AT&T was forced to abandon UNE-L as its central strategy for customers in low volume business locations because exclusive reliance on ILEC loops and AT&T's own switches proved utterly unworkable. Brenner Dec. ¶¶ 2-3, 42.

For all the same reasons that it initially pursued its UNE-L strategy, AT&T still wishes to serve low volume business locations with its own switches. AT&T now realizes, however, that such a strategy cannot succeed unless AT&T first uses UNE-P to serve those customers. Under AT&T's revised strategy, AT&T plans initially to use UNE-P to serve low volume business locations, and then, once it has enough such customers (and assuming it is otherwise economically and technically feasible to do so), AT&T plans to move them onto AT&T's own switch in a UNE-L configuration through bulk cutovers performed on a "project management basis" rather than through individual hot cuts on a one-at-a-time basis. If large numbers of cutovers are performed at the same time on a project management basis, the most debilitating aspects of the coordinated hot cut process can be avoided – principally because such a process

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allows ILEC technicians to be dedicated to the project at a single central office, and permits more advance planning and attention to detail during the cutover. Brenner Dec. ¶¶ 43-47.²⁴

This substantial change in AT&T's strategy has produced dramatic results. In just a few months AT&T was able to provision **[proprietary begin]** ***** **[proprietary end]** – nearly as much as its UNE-L strategy achieved in over two years of effort. AT&T is now offering a competitive bundle of local and long-distance services in 20 markets. In a recent trial of the project managed cutover process, the time to complete conversions fell by more than 50%, from 45 days to 21 days; the percentage of service interruptions fell from 6%-9% to 1%-3%; and, instead of a more than 50% cancellation rate, only 20% of orders are being cancelled prior to conversion. If these results can be matched elsewhere, AT&T plans to expand this strategy to serve more customers in more markets in the coming year. Brenner Dec. ¶¶ 48-51.

This history demonstrates that the ILECs' theory of incentives is exactly backwards. UNEs do not *discourage* investments in facilities; they *enable* such investments, making effective competition possible.

Residential markets. Although AT&T's efforts in residential markets differ in the details from its efforts in business markets, the lessons are the same: AT&T seeks to invest in facilities-based solutions wherever they are economically and technically feasible, because they provide the strongest basis for competitive entry, and AT&T uses UNEs only because facilities-based solutions are unavailable.

²⁴ This change in strategy has been costly for AT&T. Its OSS systems for business services had been designed around ordering UNE-L, not UNE-P, because it originally thought it would have no need for UNE-P, and therefore no use for UNE-P. Those systems have now had to be comprehensively redesigned. Brenner Dec. ¶ 43.

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First, AT&T has vigorously pursued two exclusively facilities-based vehicles for providing residential local telephone service: fixed wireless and cable. AT&T invested more than [proprietary copying prohibited begin] ***** [proprietary copying prohibited end] in support of its fixed wireless efforts. However, the costs and technical difficulties of providing fixed wireless service were greater than anticipated, and it has not been shown to be a viable business model. AT&T Wireless, which assumed responsibility for this effort when it was spun off from AT&T, has terminated the offering. Huels Dec. ¶¶ 28-29. Other carriers pursuing similar offerings have made similar decisions (or gone bankrupt).²⁵

Cable telephony, by contrast, has met with somewhat more success. AT&T spent nearly \$100 billion to purchase TCI and MediaOne, and billions more to upgrade those networks to provide telephony. Providers of cable telephony have signed up approximately 1.9 million subscribers to date, and AT&T Broadband, in conjunction with Comcast, intends to continue to pursue use of that platform vigorously after AT&T Broadband is spun off from AT&T. *Id.* ¶¶ 30-31.²⁶ But AT&T Broadband (even together with Comcast) does not have cable systems in most areas; cable systems generally do not serve business customers; cable companies in general have been able only gradually to invest in and adopt the technology needed to offer telephony; and limitations on capital and operating experience make it questionable how quickly and comprehensively this particular form of competition will evolve. Moreover, even in the areas

²⁵ Sprint, for example, decided to cease accepting new customers for its fixed wireless offering; three prominent fixed wireless companies – Advanced Radio Telecom, Winstar, and Teligent – have filed bankruptcy petitions; and XO Communications is negotiating a bankruptcy arrangement with its bondholders. *See* Huels Dec. ¶ 29 & n.3; Willig Dec. ¶¶ 87, 96.

²⁶ After that spinoff, AT&T will have no cable facilities, and its plans for providing residential local service cannot rely on them. *See* Huels Dec. ¶ 30.

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where cable telephony is offered (by AT&T Broadband or others), that alone can only bring the market from a monopoly to one with two providers – a situation which, the Commission has explained, “would be inconsistent with the Act’s goal of creating robust competition in telecommunications” because it would “not create competition among *multiple* providers of local service that would drive down prices to competitive levels.” *UNE Remand Order* ¶ 55 (emphasis added).

The only other way to serve mass market residential local customers in significant numbers is through UNE-P. The same reasons UNE-L proved untenable as an initial entry strategy for business customers apply *a fortiori*, and many times over, to residential customers. Moreover, the ILECs’ increasing use of DLC loops generally affects residential customers more than business customers and poses the same obstacles to moving customers onto AT&T switches.²⁷ And the far greater number of customers in the residential market, combined with the far greater rate of customer churn, makes it unthinkable to depend upon the error-plagued hot cut process to serve mass-market customers. Mass-market service depends upon, among other things, the availability of error-free cutovers in unconstrained volumes, and that requires a process that, like UNE-P, can be provisioned by automated software processes rather than manually. Huels Dec. ¶¶ 60-63.

In many states, however, UNE rates have not been set at a level that would enable a UNE-P based competitor to make a profit serving residential customers. *See, e.g., Sprint v. FCC*, 274 F.3d 549, 553-55 (D.C. Cir. 2001) (describing AT&T evidence of a “price squeeze” in

²⁷ Residential customers typically are located further away from ILEC central offices than business customers. Thus, they are more likely to be served by loops with DLC.

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Kansas and Oklahoma that “doomed” competitive entry).²⁸ Thus, UNE-P is effectively unavailable in those states. For the reasons already explained, AT&T is not then somehow incented to build new alternative facilities in order to compete. Instead, if AT&T does not own cable facilities in those areas, it is unable to provide mass-market residential service at all and does not attempt to do so. Indeed, the lack of UNE-P entry to serve residential customers in Massachusetts – almost a year after Verizon’s entry into the long-distance market there – shows that even the grant of a § 271 application will not spur UNE-P entry if the UNE rates are uneconomic.

By contrast, in states in which UNE-P is effectively available through reasonable UNE prices and sufficiently workable OSS processes, AT&T will seek to compete through UNE-P. Even in those states’ residential markets, however, AT&T’s plans are to use its own facilities wherever and whenever possible.

UNE-P is critical to AT&T’s ability to do that. For example, AT&T has begun to offer some residential customers in New York a “multi-service platform” (MSP) offering all telecommunications services – local, long-distance, and broadband access to Internet services. To do so, AT&T must rely on a mix of ILEC facilities and its own facilities. AT&T will use UNE-P in conjunction with line-splitting so that it can rely simultaneously on the ILEC’s circuit switched network and its own packet switched network. Under this architecture, AT&T will use the ILEC’s network, including the ILEC circuit switch, to provide voice service, while it uses

²⁸ AT&T was not able to provide service profitably even in New York until the NYPSC adopted new UNE rates in early 2002, after the conclusion of a multi-year proceeding. Indeed, if the UNE rates had not been reduced, AT&T would have been forced to exit the New York local residential market. Relatedly, while AT&T has provided UNE-P service in Texas, the rates there still remain marginal at best.

AT&T's own DSLAMs and packet switching network to provide high-speed Internet access. This configuration also permits AT&T, with the addition of voice gateways, to use its own network facilities to provide the customer with "derived voice" channels – *additional* voice lines over the *same* loop – by running the traffic through the high-frequency portion of the ILEC's loop, to AT&T's DSLAMs, through the voice gateway and then to AT&T's circuit switches. Moreover, once AT&T develops a sufficiently large customer base through this offer, AT&T will be able to transfer its MSP customers off the ILECs' switches entirely and onto AT&T's own switches where the regulatory environment and market conditions are amenable. *See* Huels Dec. ¶¶ 64-72.

3. The Regulatory Policies that Create Disincentives and other Impediments to CLEC Facilities Investment are those that Restrict Unbundling.

AT&T's market entry efforts thus make clear that the availability of UNEs has not inhibited investment in alternative facilities to serve either business or residential customers where such investment is otherwise technically and economically feasible. Other Commission policies, however, have substantially impeded such investment.

In particular, Commission policies that have restricted unbundling in ways that the Commission may have perceived as "granular" efforts to address the "impairment" test have had broad and negative effects on AT&T's and other CLECs' facilities investment. If lower-volume locations are ever to be served by a facilities-based carrier other than the ILEC, there must be ways for a CLEC to "grow into" those market segments, to move customers onto its own facilities quickly and efficiently in large numbers, and to aggregate traffic onto those facilities from multiple low-volume sources. Otherwise, no CLEC can attain the scale economies that are

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needed to justify facilities investments or the stable revenues necessary to attract capital. All those preconditions require the broad availability of UNEs.

The overriding realities are that carriers will not build facilities that they know will be underutilized, and carriers that already have underutilized facilities will not make additional facilities investments. That is particularly the case today in light of the especially tight capital markets for telecommunications. *See* Leshner-Frontera Dec. ¶¶ 73-77. Yet Commission policies that have limited unbundling have made it substantially more difficult for competitors to fill alternative facilities with traffic.²⁹ Indeed, AT&T's own local facilities are significantly underutilized, largely as a result of those Commission policies. Thus, despite its business planning, AT&T's existing DLCs (which terminate DS0 loops) serve only [proprietary begin] **** [proprietary end] of their capacity nationwide, AT&T's switches have a utilization level of only approximately [proprietary begin] *** [proprietary end], and AT&T's fiber transmission facilities are approximately [proprietary begin] *** [proprietary end] utilized. *See* Leshner-Frontera Dec. ¶¶ 12, 54, 58, 59. This means that AT&T has incurred the full cost of these investments, but is unable to generate sufficient customer demand to provide commensurate revenue. As a result, AT&T is generally unable to justify deploying additional collocations, additional transmission facilities, or additional switches. Indeed, it is abandoning many existing collocations, because they do not have prospects of being profitable in the near

²⁹ The Commission's reciprocal compensation decisions have also negatively affected CLECs' ability to sustain investments in facilities. The ILECs had created an arbitrage opportunity for CLECs on ISP-bound calls by setting artificially high rates for the termination of traffic. While this opportunity could not have been sustained in the long-term, it provided revenues that helped justify CLEC switch deployment during the period before they could obtain traffic from other sources. By eliminating those revenues, the Commission made such deployment more difficult. *See* Willig Dec. ¶¶ 21, 99.

term. Such underutilization – not the availability of UNEs – represents the single greatest obstacle to further CLEC facilities investment.

The Commission policies that have contributed to this obstacle are discussed in greater detail in later sections of these Comments, and are only briefly summarized here. First, the Commission authorized “use restrictions” and a ban on “co-mingling” that effectively deny CLECs access to the loop-transport combinations (“EELs”) that are critical to the development of a cost-effective and efficient network that is a precondition to deployment of their own network facilities. Access to EELs would make it possible for CLECs to avoid the need to collocate in many end offices, to aggregate traffic efficiently over broader geographic regions, and thereby to improve the overall economics to deploy their own switches (and possibly transmission facilities). *See UNE Remand Order* ¶ 288 (EELs allow CLECs “to aggregate loops at fewer collocation locations and increases their efficiencies by transporting aggregated loops over efficient-high capacity facilities to their central switch location”). By purchasing EELs, a CLEC could use UNEs to “fill in” its network in areas where it does not have sufficient traffic to justify a facilities build, and transport traffic from areas of low demand to hubs that then feed into the CLECs’ high-capacity fiber facilities. By restricting access to EELs, the Commission has prevented CLECs in many instances from reaching the levels of traffic aggregation that they need to fill their switching and transmission equipment and that might also justify deployment of some additional high-capacity transport facilities. *See Willig Dec.* ¶ 148; *see also infra* Part III, IV(A).

Second, the Commission had seriously obstructed CLECs’ abilities to use their own packet switching networks to provide DSL-based services to customers by failing to rule on CLEC requests for access to NGDLC loops, even though it has had a full record for over 18

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months that shows that such loops fit squarely within the basic definition of a loop but for a technical error in classifying the functions performed by the DSLAM. This error has discouraged CLEC investment in advanced services facilities (and prevented CLECs from making use of the facilities they have already deployed) by denying them access to the core functionality of ILEC loops – connectivity between the customer's premises to the central office – when the ILECs deploy DSLAMs in remote terminals. At the same time, the Commission's delay in correcting this error has enabled the ILECs to lock up the early adopters for DSL-based services, making it even harder for CLECs to compete for both DSL-based and voice services. *See infra* Part IV(B).

Third, the Commission has also made it substantially more difficult for CLECs to effectively utilize, and therefore to invest in, circuit switches. As described above, the failures of the hot cut process and the ILECs' increasing use of DLC loops have made it essential for AT&T to use UNE-P at least as an initial means of providing service to customers served by voice grade loops. But the Commission's decision to create a carve out for CLECs' access to UNE-P has hindered that partial solution to these impairments. *See infra* Part IV(C)(3).

In sum, the Commission's unbundling policies have an enormous impact on CLECs' incentives to deploy alternative facilities, even though the relationship is not recognized in the *Notice*. The greatest disincentives to CLEC facilities deployment have come about not from rules that make UNEs available, but instead from the adoption of ILEC recommendations to impose more "granular" restrictions on UNE availability. Thus, one of the most important steps the Commission can take here to encourage more CLEC facilities deployment is to eliminate those restrictions.

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B. Granting Competitors Access To UNEs Will Increase, Not Diminish, The ILECs' Incentives To Upgrade Their Networks.

The second half of the ILECs' theory of incentives – that existing unbundling obligations impair their own incentives to invest in network facilities – is equally baseless. To the contrary, the evidence shows that the availability of UNEs provides ILECs with powerful incentives to upgrade their local networks. That is because UNEs enable CLECs to deploy their own facilities, which in turn creates the greatest possible incentive for ILEC investment and deployment.

These basic economics do not change simply because the facilities at issue are used to provide broadband services. In fact, the ILECs have already undertaken much of the investment that they claim the current rules prevent them from doing. Although the ILECs would have preferred to let DSL technology languish and thereby protect their lucrative second line and business access revenues, the combined competition from cable operators and data LECs made this investment imperative. Further, as SBC's statements to investors – made under the penalties of the federal securities laws – make clear, deploying fiber in the feeder part of the loop simply makes economic sense, and therefore would happen, regardless of whether these facilities were used to provide broadband services, because such deployment substantially decreases ILEC maintenance costs. And the ILECs have been able to recover the costs of deploying fiber in the loop plant in UNE rates that are set appropriately using the Commission's TELRIC methodology.

Thus, the way to achieve the goals of § 706 of the Act is to ensure that the ILECs continue to face *both* intermodal and intramodal broadband competition. As data LEC after data LEC has stumbled or fallen in the last year, the ILECs have responded with a 25% DSL price hike, contrary to the trends in the rest of the world. Eliminating access to the high frequency

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portion of the loop, as the ILEC seek, would immunize entirely the ILECs from any intramodal competition and substantially diminish their incentives either to invest in broadband facilities or to make DSL-based services affordable for their customers. It would also mean that both the huge investment made by data LECs in packet switching and transmission electronics, and the potential for further innovation from such investment, would be lost.

1. The Empirical Evidence Overwhelmingly Demonstrates that Unbundling does not Impair ILEC Investment Incentives Generally.

The *Notice* seeks comment on the ILECs' six year-old argument that unbundling obligations, particularly the availability of UNE-P, impair their incentives to invest in network facilities. The data are now available to test the hypothesis. And as Professor Willig explains in detail (¶¶ 106-22 & Exhibits 2, 3), an analysis of these data shows that, if anything, the availability of UNE-P *increases* ILEC incentives to build because UNE-P is a precursor to facilities entry by CLECs.

In particular, Professor Willig examined ILEC investment rates for 1999 and 2000 (the last two full years for which data is available) in the states where the Commission has found OSS operational or where a § 271 application is pending. As Professor Willig's Declaration shows, in 1999 the three states with the highest ILEC investment rates were Georgia, Texas and New York, three states with very high levels of UNE-P entry. Willig Dec. ¶ 108. This trend continued in 2000: the ILEC investment rate in Georgia and Texas exceeded that of any state with low UNE-P entry, and Verizon's investment rate in New York, a state with very high UNE-P entry, was the second highest in the country (exceeded by a trivial amount only by SBC in Missouri). *Id.*

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The contrast between Georgia and Massachusetts is particularly striking. Georgia and Massachusetts have roughly comparable populations, and each has a major business center with a high technology corridor (Atlanta and Boston). *Id.* ¶ 109. Yet, these states have a widely disparate ILEC investment rate: in 1999, in Georgia, a state with relatively high UNE-P entry, BellSouth invested \$218.71 per line in new telecommunications plant and equipment, as compared to Verizon's investment of only \$145.03 in Massachusetts, a state with virtually no UNE-P entry. *Id.* This disparity grew even more significant in 2000, when BellSouth invested \$266.85 per line in Georgia, whereas Verizon invested only \$155.73 per line in Massachusetts. *Id.* Moreover, BellSouth's Georgia per-line investment increased by 22% between 1999 and 2000, while Verizon's per-line investment in Massachusetts increased by only 7.37% during the same period. *Id.*

Finally, in order to exclude the possibility that ILEC investment rates in Texas and New York – two of the states with the highest UNE-P entry – are skewed by the fact that both states are large, highly populous states with attractive markets, Professor Willig compared the ILECs' investment rates in those states with Pacific Bell's investment rate in California, another state with similar characteristics. Willig Dec. ¶ 110. Significantly, the trend observed in the 13-state comparison held true with the addition of California. In particular, the ILEC investment rate in California – a state that has had high UNE rates and virtually no UNE-P entry – is far lower than the ILEC investment rates in New York and Texas. *Id.*

Professor Willig, with the aid of Dr. Bigelow, Dr. Lehr and Dr. Levinson, then proceeded to subject the ILECs' claims that low UNE pricing discourages ILEC facilities investment to a rigorous econometric analysis of the relationship between UNE pricing and the pace of ILEC facilities investment among states. *Id.* ¶¶ 111-122. As described more fully in Professor

Willig's Declaration and the accompanying econometric appendix, using both "reduced form" and "structural form" relationships, Professor Willig's econometric results clearly reject the hypothesis asserted by the ILECs that relatively low UNE-P prices stifle ILEC investment. *Id.* ¶ 121. Indeed, those econometric results provide support just short of full statistical significance for the contrary conclusion – *i.e.*, that easing CLEC entry with relatively low UNE-P prices actually *encourages* ILEC investment. *Id.* ¶ 119.

In short, an examination of these data shows that, if anything, the possibility of UNE-based entry in a state *increases* the ILECs' incentives to invest in additional telecommunications plant in the state.

2. Nor do unbundling obligations impair ILEC incentives to deploy facilities used to provide broadband services in particular.

More recently, the ILECs have attempted to repackage their old argument to better fit what they perceive to be the prevailing *zeitgeist*. The ILECs' current version of this argument is that investment in broadband facilities is "unique" and that existing unbundling obligations at least impair their incentives to deploy these facilities. *See Notice* ¶ 23. Based on this false claim, they argue that even if competitors are not denied unbundled access to the loop to offer voice services, they should be denied such access if they attempt to use the loop to provide broadband services.

The ILECs' broadband advocacy is a cure in search of a disease. As explained in greater detail below, where the ILECs have faced competition – either from cable operators or "intramodally" from data LECs – they have aggressively deployed the facilities they need to provide broadband services and to successfully market DSL-based services at retail. Further, any ILEC reluctance to market and deploy DSL capabilities aggressively is *not* due to the Act's

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unbundling obligations. Rather, it is because DSL-based services cannibalize profitable second lines and other higher-priced services the ILECs sell to businesses (such as fractional T1 lines).

And in all events, the underlying premise of the ILEC argument is wrong: there is in fact no current shortage of “broadband supply.” As the Commission recently reported to Congress, “*advanced telecommunications is being deployed to all Americans in a reasonable and timely manner.*” *Third Section 706 Report* ¶ 1 (emphasis added). What is more, “the availability of and subscribership to advanced telecommunications has increased significantly,” “investment in infrastructure for advanced telecommunications remains strong,” and “technological and industry trends . . . indicate that alternative and developing technologies will continue to be made available to consumers.” *Id.* In fact, overall, there is “excess capacity.” *Id.* ¶ 106. Given these express findings, the Commission cannot reasonably override the CLECs’ compelling showing of impairment on the basis of a “supply problem” that does not exist.

In the few short years since the ILECs have begun competing in earnest using their ubiquitous networks and marketing channels to provide DSL-based services, the ILECs have plainly put to rest any concerns that the service is competitively disadvantaged or that the current regulatory regime has impeded the growth of broadband investment. As one analyst recently noted: “The proliferation of DSL in the telecom industry has seen one of the fastest technology adoption rates ever recorded.”³⁰ There were only 50,000 DSL subscribers in the U.S. in 1998, but by the end of 2001 there were over 3.5 million,³¹ a growth of over 7000% in only three

³⁰ *DSL Market: Demand Doesn’t Seem To Be An Issue, But Carrier Deployment Execution Does*, Robertson Stephens (January 3, 2001).

³¹ See Morgan Stanley, *Residential Broadband Update*, at 33 (Dec. 28 2001); see also News Release, *Federal Communications Commission Releases Data on High-Speed Services for Internet Access* (Aug. 9, 2001) (noting that the number of DSL lines grew 435% to 2 million
(continued . . .)

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years.³² And the growth continues. DSL-based services posted record gains in the fourth quarter of 2001,³³ despite the ongoing recession and ILECs' decision to initiate a 25% price hike.

Moreover, the ILECs' advocacy to telecommunications regulators is directly contrary to their proud boasts to investors. In fact, the ILECs have been raving about their success to Wall Street. Verizon's fourth quarter announcements reported that its high-speed Internet access subscriptions increased 122% in 2001, that the company expected another 50-75% increase in 2002, and that it has deployed DSL technology to central offices serving 79% of access lines.³⁴ Similarly, Qwest announced a 77% increase in high-speed Internet access customers last year.³⁵ SBC (which started to implement DSL capabilities ahead of the other RBOCs) informed investors of a 69% increase for 2001,³⁶ and that it expects another 50% increase by the end of

(... continued)

lines in 2000); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Third Notice of Inquiry, CC Docket No. 98-146, ¶ 16 (Aug. 10, 2001) (“[T]he number of ADSL subscribers is growing faster than the number of cable subscribers.”); *id.* ¶ 20 (“[T]he data also show continued rapid growth by all technologies, with ADSL gaining significantly on cable’s lead.”).

³² See Morgan Stanley, *Residential Broadband Update* 33 (Dec. 28 2001).

³³ *DSL Posts Record Gains During Q4*, *Broadband Daily* (Feb. 4, 2002); see also *Communications Daily* (Feb. 13, 2002) (reporting that “U.S. DSL lines totaled 4.4 million at end of year, up 542,000 [or 14%] from end of 3rd quarter”)

³⁴ News Release, *Verizon Communication Reports Solid Results for Fourth Quarter, Provides Outlook for 2002* (Jan. 31, 2002).

³⁵ News Release, *Qwest Communications Reports Fourth Quarter, Year End 2001 Results*, Jan. 29, 2002.

³⁶ News Release, *SBC Reports Fourth-Quarter Earnings* (Jan. 24, 2002).

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2002.³⁷ Finally, BellSouth crowed that the company enjoyed 188% growth last year,³⁸ claiming “[w]e’ve had the best quarter we’ve ever had,” and boasting that the company expects the number of broadband customers to nearly double in the coming year.³⁹ “We’re pretty excited by the numbers,” explained a BellSouth spokesman: “Our goal was 600,000 subscribers by the end of the year, and we went substantially past that.”⁴⁰ BellSouth now plans to reach 1.1 million DSL subscribers in its markets by the end of 2002.⁴¹

Given this remarkable success story, it is no wonder that the Administration concluded last month that the principal limitation on increased deployment of broadband is one of *demand*. See *Bush Administration Officials Detail Broadband Challenges*, Tech Daily (March 5, 2002). Broadband systems have been widely deployed throughout the United States. But the reason that acceptance rates are not higher is a lack of compelling broadband content. Content limitations, of course, have nothing do with the ILECs’ unbundling obligations under the Act; rather, they are driven by other issues that mute consumer interest in the service (such as copyright and intellectual property laws). *Id.* Adopting the ILECs’ proposals would simply further entrench their local monopolies without doing anything to increase broadband subscribership.

³⁷ News Release, *SBC Reaffirms 2002 Outlook, Updates Growth and Expense Management Opportunities* (March 7, 2002).

³⁸ News Release, *BellSouth Captures 620,500 DSL Customers and Deploys Broadband Capabilities to More Than 15.5 Million Lines* (Jan. 3, 2002).

³⁹ *Huge DSL Growth Likely*, *The Miami Herald*, at 1C (Jan. 4, 2002).

⁴⁰ *BellSouth Logs Rapid Growth in DSL Connections*, *Orlando Sentinel* (Jan. 4, 2002).

⁴¹ *BellSouth Announces the Availability of High-Speed DSL Service in Additional Rural Georgia Markets*, PR Newswire (March 25, 2002).

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In all events, eliminating unbundling obligations would plainly *reduce* overall investment in broadband. First, it would neutralize the CLECs' substantial investments in electronics required to convert loops into broadband pipes and discourage any further investments needed to support intramodal competition over the ILECs' loops. And it would have no adverse effect on ILEC investments in loop infrastructure, because of the ILECs' economic incentives to protect the value of their existing monopolies and narrowband service. ILECs have made and will make such broadband loop investments only to meet competition and to permit themselves to achieve efficiencies and cost savings in their voice services – and ILECs have made or are making these investments in all the areas where UNE-based service could be offered. TELRIC principles give ILECs a right to a full risk-adjusted return on facilities and CLECs offering DSL-based services will pay the full economic cost of the upgraded loops. Thus, the duty to unbundle facilities at TELRIC rates will not impede investment in infrastructure, and will if anything, provide the ILECs with positive incentives to make such investments.

These are the precise conclusions reached by the OECD in its recent report on initiatives that should be undertaken to spur broadband deployment. The OECD found that “[i]nitiatives to open the local loop are viewed by most OECD governments as being fundamental to promoting a fast rollout of broadband service. . . . [T]here are huge investments being made by new entrants in local access markets, where unbundled elements are available, to provide broadband services.”⁴² The OECD concluded that unbundling “*does not deter incumbents from investing in upgrading networks or new entrants from investing in their own infrastructure.*”⁴³

⁴² OECD, *Telecommunications and Information Services Policies*, DSTI/ICCP/TISP (2001) FINAL, 29-Oct-2001 at 15.

⁴³ *Id.* at 16. (emphasis added).

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- a. The ILECs cannot be relied upon to make broadband investments consistent with the public interest.**

To the extent that the Commission wishes to promote further broadband investment, it must begin by recognizing that the ILECs cannot be expected to do so absent both inter- *and* intramodal competition. Basic economic principles establish that monopolists do not invest the full amounts required for economic efficiency when they are provided with monopoly returns on their investments. To the contrary, a monopolist will resist investing in new technology if the introduction of such technology will undercut the value of its existing assets. *See Willig Dec.* ¶ 173.

That is the case here. Unlike cable and satellite broadband providers, the ILECs will not invest in deploying broadband facilities simply because the revenues provided by the services that can be provided over those facilities cover the incremental costs of the investment. Increased broadband demand cannibalizes the highly-profitable local service business the ILECs dominate. *Id.* ¶ 174. Likewise, the ILECs' own DSL-based services draw customers away from their more profitable narrowband access lines. *Id.*

More specifically, it has been estimated that over one-fourth of American households have more than one telephone line, and that most of these extra lines are used for narrowband Internet access.⁴⁴ According to a survey conducted by Gartner Dataquest, during the first half of 2001, about 3% of U.S. households replaced a traditional telephone access line with broadband. Gartner estimates that in just six months, nearly 4 million access lines were displaced by

⁴⁴ Stephens, Inc., *Ringtonges: DSL Part II: No Quick Fixes in the Residential Market, Part I* (Oct. 8, 2001).

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broadband.⁴⁵ This is more than the *total* number of RBOC DSL lines (3.6 million) at the end of 2001.⁴⁶ Just recently, the Commission's policy chief recognized this "ripple effect."⁴⁷

Because broadband services service cannibalize monopoly voice services, ILECs cannot be expected to invest in the facilities used to provide broadband services and market those services unless *overall* profits from both broadband and narrowband services will increase. But this will generally not occur unless broadband competition – both intermodal and intramodal – threatens ILECs' second telephone line and other revenues. History proves exactly this point.

For decades, the ILECs were reluctant to deploy ISDN service for fear that it would eat into profits they earn from multiple lines and other data services. Despite the fact that it was based on technologies developed in the 1970s, the ILECs offered ISDN only sparingly in the 1980s. Indeed, the ILECs' lack of interest in marketing ISDN was so manifest that the product earned the unflattering nickname "I Still Don't Know," as in, "I still don't know when I will be

⁴⁵ Gartner, Inc., *U.S. Residential Wireline Voice Access Lines Head South, Revenues Head North* (Aug. 31, 2001). This report is not publicly available, but the results are summarized in Jay Wroldstad, *U.S. Consumers Migrating Toward Broadband, Wireless*, Wireless NewsFactor (Sept. 19, 2001) (available at <http://www.wirelessnewsfactor.com/perl/story/?id=13619>). Gartner found during the first six months of 2001, some 6% of U.S. households replaced a traditional access line with alternative communications equipment. Of these, 55% (*i.e.*, 3% of U.S. households) replaced the access lines with broadband service.

⁴⁶ In their year-end earnings reports, the RBOCs reported the following numbers of DSL lines: Verizon 1.2 million; BellSouth 620,500; SBC 1.3 million; Qwest 448,000. News Release, *Verizon Communications Reports Solid Results for Fourth Quarter, Provides Outlook for 2002* (Jan. 31, 2002); News Release, *BellSouth Reports Fourth Quarter Earnings* (Jan. 22, 2002); News Release, *SBC Reports Fourth-Quarter Earnings* (Jan. 24, 2002); News Release, *Qwest Communications Reports Fourth Quarter, Year-End 2001 Results* (Jan. 29, 2002).

⁴⁷ Communications Daily, at 2 (Feb. 21, 2002) (quoting Robert Pepper, chief of Commission Office of Plans and Policy).

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able to buy this service.”⁴⁸ Although ISDN has now “saturated” Europe, the “traditional local telephone companies sat on their hands.”⁴⁹

Similarly, it is now well-established that it would have been technologically possible for the ILECs to deploy DSL technology years ago. “Although ILECs have possessed DSL technology since the 1980s, they did not offer the services, for concern that it would negatively impact their other lines of business.” FCC Cable Services Bureau, *Broadband Today*, 27 (Oct. 1999). It was not until the cable companies and new entrant data LECs began offering broadband services that the incumbent providers made any serious attempt to deploy and promote these services. As the Commission recently observed, “the expansion of DSL in the past two years by incumbent LECs ‘is primarily a reaction to other companies’ entry into broadband.” *AOL-Time Warner Merger Order* ¶ 113 (quoting *UNE Remand Order* ¶ 325 n.642). An analyst put the matter more bluntly:

The cable industry began deploying cable modem service in 1996 versus 1999 for the RBOCs and DSL. While DSL technology has been available for many years, it was never offered to customers for fear it would cannibalize existing revenue streams for the RBOCs.⁵⁰

This view of ILEC incentives is also supported by their pricing behavior. During 1999 and 2000, the major ILECs all launched large DSL deployment initiatives, and generally lowered their prices to match cable modem rates. *See Willig LEC BB Dec.* ¶ 141. Then, when it became

⁴⁸ See Charlotte Dunlap, *Small and Midsize Business Solutions – Lifting Small Business Into The Fast Lane*, Computer Reseller News (Aug. 21, 2000);

⁴⁹ *Id.*

⁵⁰ Richard Bilotti, Morgan Stanley, *Telecom – Cable: Residential Broadband Update* (Oct. 15, 2001).

apparent that their DSL-based service could not immediately match cable's broadband share in head-to-head competition (*i.e.*, in areas where both cable modem service and DSL-based service were available), the ILECs decided to raise DSL prices by 25%, despite the predictably large suppression of demand for broadband. *Id.* ¶¶ 102-07; *see also* Willig Dec. ¶¶ 177-78. None of this makes sense, of course, unless the suppression of DSL demand served another purpose – *i.e.*, protection of the ILEC monopoly over wireline and narrowband services.

Indeed, the distance that the ILECs will travel to protect their monopoly revenues is demonstrated by their steadfast refusal to upgrade their local networks prior to the onset of cable competition. As discussed below, the ILECs have publicly recognized that installing more fiber into the local loop can be justified solely on the grounds of the maintenance cost savings it achieves with respect to the voice services the ILECs offer. But the ILECs also know that doing so would facilitate the ability of data LECs to offer DSL-based services more broadly – services that would eat into the ILECs' monopoly profits from their second line and high speed business services. As a result, the ILECs simply resisted making loop investments that would pay for themselves.

b. Eliminating ILEC unbundling obligations would decrease overall broadband investment.

Eliminating existing unbundling obligations for DSL functionality would reduce the overall investment in broadband network facilities. By definition, adopting the ILECs' unbundling restrictions would wipe out the data LEC industry and end that industry's substantial and continuing investments in packet switches and in the DSLAM and associated electronics used to provide DSL-based service. On the other hand, eliminating existing unbundling

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obligations is not necessary to provide the ILECs with incentive to invest in broadband infrastructure.

Generally speaking, there are two sets of investments that are relevant to any discussion of ILEC “incentives” to invest in the facilities used to provide broadband services – electronics (DSLAMs, routers, and other equipment used to provide DSL-based service) and the loop.

Packet Switches, DSLAMs and Associated Electronics. There can be no question that UNE-loop unbundling facilitates investment in DSLAMs and related equipment, as well as packet switches. Willig Dec. ¶ 154. By allowing data LECs to gain unbundled access to the loop, data LECs can collocate their own packet switches, DSLAMs and associated electronics at ILEC central offices and use this equipment to provide DSL-based services. *See Line Sharing Order* ¶ 57 (1999) (“the availability of shared-line access will encourage data carriers to continue investing in network facilities . . . and should promote further innovation in xDSL technologies”). Indeed, the data LECs made massive investments in packet switches, DSLAMs, routers, splitters and related equipment while ILECs initially sat on this technology. *See UNE Remand Order* ¶ 307 (documenting extensive deployment of network equipment by data LECs); *Third Section 706 Report* ¶ 69 (overall, CLECs spent “about \$17 billion in 1999, \$22.6 billion in 2000, and an estimated \$14.2 billion in 2001”); *see also* Willig Dec. ¶¶ 88. That investment would be choked off entirely if unbundled access to loops were curtailed, because data LECs would have no way to access customers. *See UNE Remand Order* ¶ 313 (data LECs would be “den[ied] entry into the market” if they are unable to obtain access to “loops”). The reduced competition would, in turn, give ILECs substantially fewer incentives to invest in such electronics themselves.

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As the Commission has recognized, competition in this “unshared” part of the network permits data LECs to “differentiate” themselves from both ILECs and one another and can provide substantial consumer benefits. *See also Second Section 706 Report* ¶¶ 9, 128. AT&T’s planned voice/data offering provides a vivid example of the enormous consumer benefits that can flow from intramodal DSL competition through investment in next generation electronics. AT&T plans to offer a new voice/data offer in several markets that, in addition to the normal voice line provided over the low frequency portion of the loop, will include a DSL capability that can be used for Internet access and two “derived” voice lines provided over the *high frequency* portion of the loop. *See* Huels Dec. ¶ 64 & n.18. The derived lines will have all of the characteristics of, and to the consumer be essentially indistinguishable from, ordinary voice lines provided by the ILEC today. *Id.*

Loops. As explained in more detail below in Part IV(B) below, DSL functionality can be provided on lines up to 18,000 feet of copper in the loop (and higher speeds can be offered on loops with up to 12,000 feet of copper). Thus, by deploying fiber feeder, the ILECs are able to extend the number of customers who can receive DSL-based service and to provide higher speed services to many subscribers. And contrary to the ILECs’ misleading rhetoric, they have already made or are in the process of making incremental upgrades to their network to allow DSL-based services to be offered broadly in response to cable and data LEC competition and to obtain the efficiency savings that such upgrades allow even if no DSL-based service is offered.

The ILECs have already invested widely to create broadband-capable networks. *See Third 706 Report* ¶ 69. Moreover, “[a]ll indications are that fiber deployment by incumbent LECs is increasing.” *Line Sharing Reconsideration Order* ¶ 13. For example, BellSouth has

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undertaken “the most aggressive DSL deployment strategy in the industry”⁵¹ and it “continues to commit the majority of [its] capital investment to systematically transforming the core network.”⁵² BellSouth’s DSL deployment currently reaches 70% of households (15.5 million lines), up from 45% at the end of 2000, and the company anticipates passing 76% of households by the end of the year.⁵³ Similarly, SBC also reported that it has expanded its DSL-capable footprint by 37% to 25 million customers,⁵⁴ that currently 62% of its households are DSL qualified.⁵⁵ Verizon has nearly completed the investment that it believes will make it the “gold-medal winner in the high-speed Internet race”⁵⁶ and can offer DSL-based service to more than half of its customers.⁵⁷ Even Qwest, which has the most geographically dispersed customer base, has already made the investments necessary to dramatically expand its DSL footprint to cover nearly half of its subscribers.⁵⁸ Overall, “[t]here have been tremendous recent increases in

⁵¹ News Release, BellSouth, *BellSouth Captures 620,500 DSL Customers and Deploys Broadband Capabilities to More Than 15.5 Million Lines* (Jan. 3, 2002).

⁵² BellSouth Corporation, Annual Report 2000 (2001).

⁵³ News Release, BellSouth, *BellSouth Captures 620,500 DSL Customers and Deploys Broadband Capabilities to More Than 15.5 Million Lines* (Jan. 3, 2002).

⁵⁴ News Release, SBC, *SBC Reports Fourth-Quarter Earnings* (Jan. 24, 2002).

⁵⁵ *SBC: 4Q Beat EPS Expectations*, Salomon Smith Barney Research Report (Jan. 24, 2002) (available at http://www.salomonsmithbarney.com/cgi-bin/quote/gw.cgi/cgi-bin/bench/idd_permit?symbol).

⁵⁶ Letters, *Column Delivers Fuzzy Picture About Cable*, USA Today (Feb. 14, 2002).

⁵⁷ See *Verizon Passed One Million DSL Line-In-Service Milestone*, High-Speed Internet Access (Nov. 1, 2001).

⁵⁸ See also Ralph de la Vega, *BellSouth Broadband: Taking the Lead* (Nov. 5, 2001) (available at http://media.corporate-ir.net/media_files/nys/bls/presentations/110501/delavega/index.htm) (demonstrating that Qwest had 42% of qualified DSL lines by the end of 2001).

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availability of DSL due to investments in deployment,” *Third Section 706 Report* ¶ 70, and as a result, the ILECs have dramatically increased their DSL subscribership.

Recent data from the Commission’s *Universal Service Monitoring Report* confirms the significant investment the ILECs have already made in deploying fiber loops in their networks. According to that report, the ILEC working channels on fiber loop carrier grew at an average *annual* rate of 26% from 1991 to 2000. *Universal Service Monitoring Report*, Table 10.2 (Oct. 2001). At the end of 2000, the ILECs had 42.2 million channels working on fiber digital carrier. *Id.* Thus, over one in every five loops already utilizes a fiber-based carrier. *Id.* This investment in fiber was clearly *not* made to accommodate only loop plant growth. The Commission’s data show that main frame-terminated copper loops grew by only 0.5%. *Id.*

Despite the ILECs initial reluctance to cannibalize existing high margin voice/data services, they eventually made these investments for two reasons. First, as described above, they had no choice. *See also* Willig Dec. ¶¶ 158, 172. Cable operators and data LECs – who have no monopoly revenue streams to protect – began to aggressively market broadband services. Given that these carriers’ broadband offerings were going to eat into the ILECs’ narrowband revenues whether or not they deployed DSL technology, the ILECs then had incentive to deploy DSL technology aggressively to minimize the damage.

Second, the loop investments at issue are independently justified solely by efficiencies and savings related to the provision of voice and narrowband services. *Id.* ¶ 170-71. This is because the “broadband” investments being undertaken by the ILECs inherently apply to facilities that provide both narrowband voice and data and greatly increase the profitability of the narrowband voice offering.

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SBC made this point expressly in describing its "Project Pronto" to investors. SBC described the project as including \$6 billion investments in network investments, 75% of which "will be directed to [these] improvements in the basic loop infrastructure" (*i.e.*, fiber feeder and "next generation" remote terminals) and 25% of which "will fund other infrastructure improvements, especially in the tandem and interoffice network." SBC Investor Briefing, *SBC Announced Sweeping Broadband Initiative*, at 2 (Oct. 18, 1999). SBC stated that the "capital and expense savings" will total "\$1.5 billion annual[ly] by 2004" and that such savings alone "will pay for the entire initiative on NPV [net present value] basis" – *i.e.*, irrespective of opportunities for increased DSL revenues. *Id.*

More specifically, with regard to "Expense Savings," SBC informed investors:

The new loop infrastructure, with the additional dedicated feeder capacity the fiber provides, will substantially reduce the need to rearrange outside plant facilities when installing new or additional services. By avoiding dispatches on many installations, SBC expects to realize efficiencies in its installation and maintenance operations. Other anticipated efficiencies will come from reduced activity required in the remaining copper plant because of improved reliability. A fiber-based distribution network is expected to be less vulnerable to weather conditions, thereby reducing trouble reports.

In some cases SBC is making investments in new technologies to dramatically reduce the cost of supporting future growth. A good example is the company's plan to move most of its copper-based DS-1s to fiber at certain locations. With the fiber in place, the cost of providing additional bandwidth via electronics will be significantly less than adding more copper lines. Reducing the number of copper-based DS-1s has the added benefit of eliminating a source of interference, which will make the remaining copper-based facilities available for DSL service. In other cases, such as the plan to replace existing circuit-switched tandems with new fast packet technologies, costs associated with future growth as well as maintenance expenses will be reduced.

Id. at 7.

And with regard to capital savings, SBC observed: